

REMARKS

The Examiner provides a number of rejections and we list them here in the order in which they are addressed:

- I. The drawings are objected to for non-compliance with 37 CFR 1.83(a) because the drawings fail to show the invention recited in either Claim 25 or Claim 33.
- II. Claims 25-40 are rejected under 35 USC § 112 ¶ 1 as allegedly containing subject matter not described within the specification.
- III. Claims 25 and 28-32 are rejected under 35 USC § 102(b) as being allegedly anticipated by Newkirk *et al.* (United States Patent No. 1,876,520).
- IV. Claims 25, 28-33 & 36-40 are rejected under 35 USC § 102(b) as being allegedly anticipated by Otto *et al.* (United States Patent No. 3,572,730).
- V. Claims 27 & 35 are rejected under 35 USC § 103(a) as being allegedly unpatentable over Otto *et al.* in view of Blackman *et al.* (United States Patent No. 5,452,771).
- VI. The Examiner requests amendment of the specification to provide consistency with the corrected Figure 2.

I. The Drawings Comply With 37 CFR 1.83(a)

The Examiner asserts that the embodiments of the present invention recited in Claim 25 and Claim 33 are not shown in the drawings. The Applicants disagree.

The Examiner states that "... no figure shows a seal assembly **comprising all** of the limitations of either claim." (*Office Action*, ¶ 5) [emphasis added]. The Applicants remind the Examiner that the MPEP and CFR clearly indicate that claim features may be found in ANY drawing or a combination of drawings. There is NO requirement that all the features be

found in the SAME drawing. In particular, the Examiner should note that the MPEP and the CFR consistently use the term "drawings" not "drawing".

Even assuming (for the sake of argument) that the CFR and MPEP did require all claim limitations to be presented in the same drawing (which they do not), the Applicants submit that Figure 7 in the present specification provides sufficient teachings that all elements (*i.e.*, highlighted as the underlined phrases below) recited in Claim 25 and Claim 33 are represented in Figure 7. More specifically, Figure 7 shows:

- seal assembly and mounting ring:
The Examiner admits Figure 7 "... shows a seal assembly comprising a mounting ring ...". *Office Action*, ¶ 5.
- a first surface comprising a seal ring:
"Seal 10 has ... a seal ring 30 ..." *Applicants' Specification*, pg. 13 ln 1-2.
- outer peripheral edge:
"Seal 10 has ... an outer peripheral edge 32 ..." *Applicants' Specification*, pg. 13 ln 1-2
- textured features interior to said outer peripheral edge and protrusions:
"Seal 10 has ... a contact surface 36." *Applicants' Specification*, pg. 13 ln 1-3. The Examiner is pointed to Figures 2, 3, 5 and 6 that provide additional detail of contact surface 36. These figures clearly identify that contact surface 36 comprise both textured features interior to said outer peripheral edge (see Figures 5 & 6) and protrusions (see Figures 2 & 3). The Examiner is reminded that a patent application reciting identical reference numbers in separate figures are, in fact, identical elements.
- substantially flat second surface in motion:
"The present invention also contemplates an assembly, **comprising** ... said second surface being substantially flat and pressed against said first surface to produce a seal." *Applicants' Specification*, pg. 4 ln 9-11. [emphasis added]
"The seal is biased against a bushing 50 at a surface adjacent the outer peripheral edge 32. ... The bushing 50 is a steel bushing. An electric motor, not shown in the figure, is connected to the steel bushing and rotates the steel bushing with respect to the seal." *Applicants' Specification*, pg. 13 ln 3-7.
"A seal was mounted in an apparatus shown in Fig. 7. ... The steel bushing was oscillated $\pm 20^\circ$." *Applicants' Specification*, pg. 13, ln 13-15.

The Applicants conclude, therefore, that Figure 7, and its associated teachings within the specification sufficiently teach all the elements and limitations recited in both Claim 25 and Claim 33. The Examiner is respectfully requested to withdraw this objection.

II. Claims 25-40 Comply With 35 USC § 112 ¶ 1

The Examiner states that Claims 25-40 are rejected under 35 USC § 112 ¶ 1 as containing subject matter not described in the specification because "... the original disclosure includes no description of a flat surface in motion relative to a seal ring that is bonded to a mounting ring, such that a seal ring has textured features." *Office Action* ¶ 8. The Applicants disagree and remind the Examiner that claims do not require specification support in the form of a single sentence.

The Examiner is requested to review the exemplary specification support for the claim elements presented above regarding the objected to drawings. Clearly, Figure 7 provides sufficient support for the embodiment the Examiner believes is not defined. The textured features (fully detailed in Figures 2 & 3 on contact surface 36) are inherent to contact surface 36 specifically identified in Figure 7.

Further, one skilled in the art would recognize by inspection that the left surface of bushing 50 shown in Figure 7 is, in fact, "substantially flat". The Examiner has not provided any objective evidence to indicate otherwise.

Nonetheless, to better define one embodiment as well as further the prosecution, and without acquiescing to the Examiner, and hereby expressly reserving the right to prosecute the unamended (or similar) claims in the future, the words "substantially flat" have been removed. The Applicants, therefore, respectfully request the Examiner withdraw this rejection.

III. Claims 25 and 28-32 Are Not Anticipated By Newkirk *et al.*

The Examiner rejects Claims 25 and 28-32 under 35 USC § 102(a) as being anticipated by Figures 1 and 2 of Newkirk *et al.* The Applicants disagree. As the Examiner is well aware, a single reference must disclose each limitation of a claim in order for that reference to anticipate the claim. *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 224 U.S.P.Q. 409, 411 (Fed. Cir. 1984).

The sealing ring 25 described in Newkirk *et al.* is segmented (*i.e.*, comprising multiple

pieces) and requires assembly:

Sealing ring 25 comprises a number of segments encircled by a strip 29 (Fig. 3) and pressed together by means of a flexible ring 30 having flanges 31 provided with holes 32 into which a bolt 33 is inserted for securing said flexible ring to the circumference of said sealing ring. *Newkirk et al.*, col 2 ln 63-79.

Therefore, *Newkirk et al.* does not teach a "unitary seal" as recited in the amended claims.¹ Support for a "unitary seal" may be found in the Applicants' specification, for example:

In such an embodiment, the protrusions and indentations may be of unitary construction and formed by integrally molding the elastomeric material. pg. 3 ln 11-13.

and,

The term "unitary construction" refers to an association of elements of the invention such that they are formed from the same piece of raw material without the need for further integration. pg 9 ln 6-8.

Applicants, therefore, respectfully request the Examiner withdraw the rejection.

IV. Claims 25, 28-33 & 36-40 Are Not Anticipated by Otto et al.

The Examiner rejects Claims 25 and 28-33 and 36-40 under 35 USC § 102(a) as being anticipated by Figures 1, 9 and 10 of *Otto et al.* The Applicants disagree. The Examiner states that:

Figs. 9 & 10 shows a seal assembly comprising: a textured surface [wear surface] 52, the textured surface comprising a seal ring bonded to a mounting ring [rigid seal case] 12 (see Fig. 1 and col. 6, lines 63-66) ..., the textured surface [wear surface] 52 comprising a curved outer peripheral edge and protrusions [asperities] 54 interior to the outer peripheral edge and a substantially flat surface [seal face] 70 contacting the textured surface ... *Office Action*, ¶ 10.

The Applicants submit that the Examiner has confused the common elements of seal construction 2 and seal construction 50 as disclosed by *Otto et al.* More specifically, the Examiner has improperly introduced the rigid seal case 12 element into the seal construction 50 embodiment represented by Figures 9 & 10. There is no basis for doing this. Applicants

¹ The "unitary seal" language has been added to further business interests, better define one embodiment and expedite the prosecution of this application. Applicants hereby expressly reserving the right to prosecute the original (or similar) claims.

wish to point out that the specification of *Otto et al.* states:

Referring now to FIGS. 9 & 10, *aside from* the circumferential lip seal construction 2, the foregoing principles may, in addition, be employed in a seal construction 50 of the parallel face variety. Like the seal construction 2, the seal construction 50 includes a wear surface 52 composed of a multiplicity of asperities 54 separated by depressions 56. *Otto et al.*, col 6 ln 63-68 [emphasis added].

The Examiner is requested to note that *Otto et al.* limits the common elements between seal constructions 2 and 50 to the wear surface 52, asperities 54 and depressions 56. *Otto et al.* does not state, as the Examiner apparently believes, that seal construction 50 includes a rigid seal case 12. In fact, Figures 9 & 10 do not disclose any element that can be interpreted as a mounting ring. Therefore, Applicants respectfully request that the Examiner withdraw the rejection.

V. The Examiner Has Not Provided A *Prima Facie* Case For Obviousness

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference(s) themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ.2d 1438 (Fed. Cir. 1991); and *MPEP* § 2142; Establishing A *Prima Facie* Case Of Obviousness. The Examiner is reminded that if ONLY ONE of the above requirements is not met, then a *prima facie* case of obviousness does not exist. In the present Office Action, the Applicants clearly demonstrate that the Examiner's rejection does not meet these criterion. The Applicants rebut the establishment of a *prima facie* case of obviousness by the argument below.

The Examiner rejects the dependent Claims 27 & 35 as being unpatentable over *Otto et al.* in view of *Blackman et al.* because:

Fig. 10 [of *Otto et al.*] shows textured surface [wear surface] 52 with protrusions [asperities] 54 that have triangular shape, but does not show the protrusions with a cylindrical shape. In Figs. 4B & 4C, *Blackman* shows that a textured surface having triangular protrusions and a textured surface have cylindrical protrusions are art recognized equivalents. It would have been obvious to one of ordinary skill in the art to modify the seal assembly of *Otto* by making the textured surface with cylindrical protrusions instead of triangular protrusions since textured surfaces with cylindrical

protrusions and triangular protrusions are art recognized equivalents as shown in Blackman. *Office Action*, ¶ 11.

The Examiner has not pointed to, nor can the Applicants' find, any motivation or suggestions within either cited reference that would cause one skilled in the art to combine the references. Even if combined (improperly) all elements are not taught.

The Applicants remind the Examiner regarding the above argument demonstrating that Otto *et al.* does not anticipate the Applicants' claimed embodiment because Otto *et al.* fails to disclose a mounting ring. Further, Blackman *et al.* does not disclose a mounting ring either. Clearly, the combination of Otto *et al.* and Blackman *et al.* does not teach all the elements in the Applicants' claimed embodiment. This common deficiency of a mounting ring in both Otto *et al.* and Blackman *et al.* is fatal to the Examiner's argument that the cylindrical protrusions within Blackman *et al.* create the Applicants' claimed embodiment when combined with Otto *et al.*

The Applicants now respectfully request the Examiner withdraw the rejection.

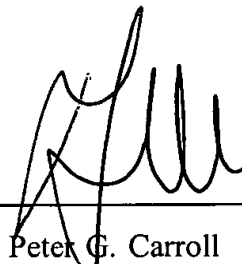
VI. The Specification Reflects Proper Reference Numerals

The Examiner requests amendment to the specification because "The disclosure is objected to because the paragraph at the top of page 10 must be amended to include the reference numeral changes in Fig. 2a-2h." *Office Action*, ¶ 6. The Applicants thank the Examiner for accepting the corrected Figure 2 and provide herein the appropriate amendments to the specification (*supra*).

CONCLUSION

The Applicants believe that the arguments and claim amendments set forth above traverse the Examiner's rejections and, therefore, request that all grounds for rejection be withdrawn for the reasons set above. Should the Examiner believe that a telephone interview would aid in the prosecution of this application, the Applicants encourage the Examiner to call the undersigned collect at 617.984.0616.

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